

LTA-20



20 GHz Lightwave Transmitter Module for RFoF

The Optilab LTA-20 is a high performance Lightwave Transmitter Module designed for analog photonics applications from DC to 20 GHz. This unit includes a 18 GHz optical intensity modulator and an Automatic Bias Control (ABC) board with four different operating modes. The external laser source can be any polarization maintaining device, such as tunable laser, narrow linewidth laser, making it a versatile solution for RFoF system integration. Contact Optilab for more information.

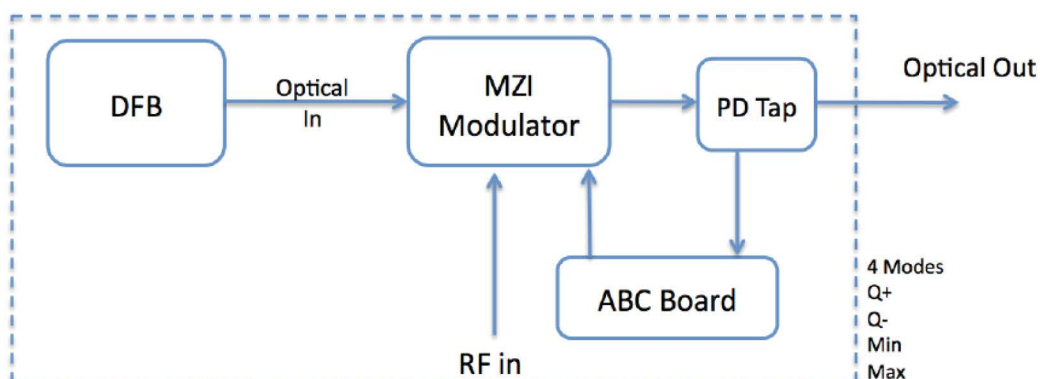
Features

- 18 GHz S21 bandwidth modulator
- 1520 nm to 1610 nm wavelength range
- Automatic Bias Control w/ 4 mode operation
- Internal DFB laser up to 50 mW
- Customizable options:
 - Low Drive Voltage
 - PM Output
 - High Extinction Ratio (>30 dB)
 - Temperature Qualified (-55 °C to +75 °C)

Applications

- Analog photonics
- 20 GHz RFoF transmission
- RF/IF signal distribution
- Satellite communication
- Optical communications to 25 Gb/s
- Sub-nanosecond pulse generation

Functional Diagram



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OPTIONS

LTA-20-XX-YY

- XX **LD:** Low Drive Voltage
PM: Polarization Maintaining
HE: High Extinction Ratio
- YY **TQ:** Temperature Qualified

TECHNICAL INFO

For technical info and support:

sales@optilab.com

www.optilab.com

WEB ORDER

To order, please visit OEQuest.com.



Optilab Advantage

- Innovation
- Performance
- Quality
- Customization
- Warranty

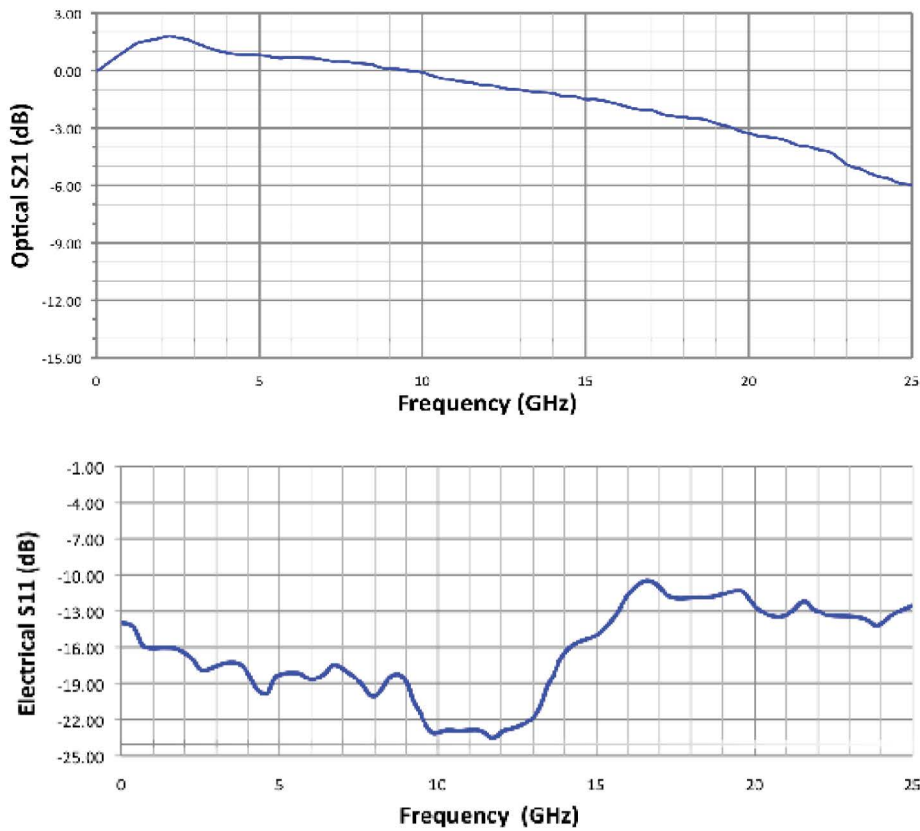
General Specifications	
Operating Wavelength	1520 nm to 1610 nm
Laser Source	Internal DFB laser, 1550nm±10 nm; other wavelength and narrow linewidth <1 MHz are available
Laser Power Level	20 mW, 30 mW, 40 mW, 50 mW
RF Return Loss	>15 dB @ 10 GHz; >10 dB @ 20 GHz
Impedance	50 Ω
Operating Frequency Range	DC to 25 GHz
Input RF Voltage	27 dBm max.
Optical Output Level	6.5 dBm typ. with 20 mW DFB
S21 Bandwidth	3db, 2GHz to 18 GHz typ.
Modulator Bias Mode	4 Automatic bias control modes, selectable by software
Extinction Ratio	25 dB typ.; >30 dB (HE version)
Modulator Voltage V_{PI}	7 V typ. @ 10 GHz; 5.5 V typ. @ 10 GHz (LD version)
Analog Link Performance	
IIP3 @7 GHz	32 dBm typ.; 29 dBm typ. (LD version)
1 dB Compression Point @10 GHz	16.5 dBm typ.; 14.5 dBm typ. (LD version)
Mechanical Specifications	
Operating Temperature (standard)	-30 °C to +60 °C
Operating Temperature (TQ version)	-55 °C to +75 °C
Storage Temperature	-60 °C to +90 °C
Power Supply Requirements	±5V, 1A typ.
Optical Connectors	FC/APC
Fiber Type	SMF-28 output; PANDA output (PM version)
RF Input Connector	K connector
Power Connector	4 Pin Molex
Remote Control	USB 2.0 software included
Alarm	LED bias mode status
Dimensions	206 mm x 102.4 mm x 31.5 mm

Bias Control Mode

Mode	Operation Conditions
Q+	Set to quadrature point of positive slope for linear analog modulation
Q-	Set to quadrature point of negative slope for linear analog modulation
Min	Set to min. point of operation for pulse generator or digital modulation
Max	Set to max. point of operation for pulse generator or digital modulation

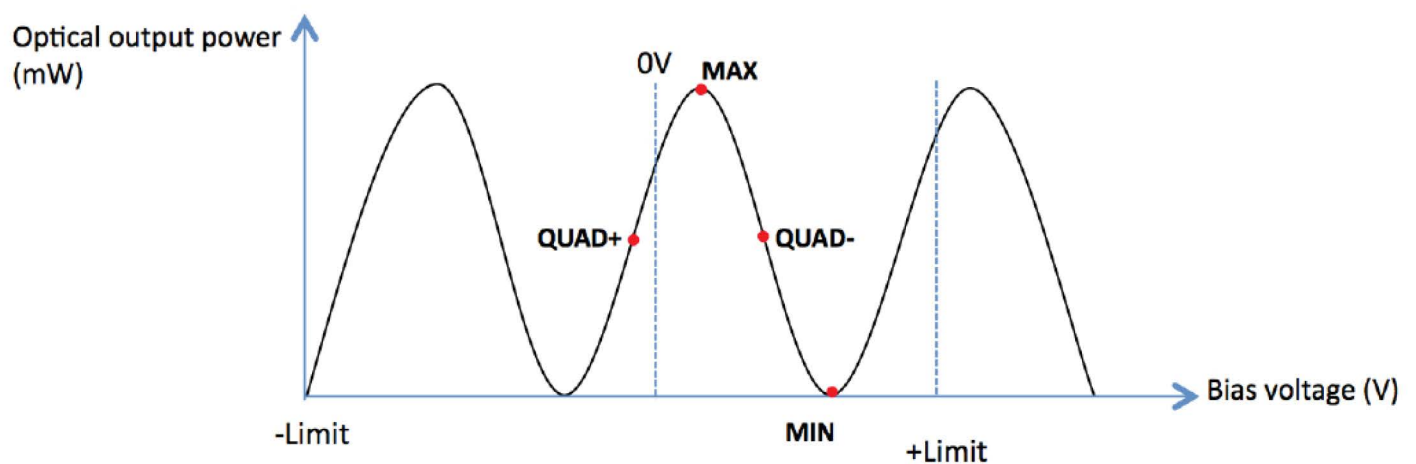
20 GHz Lightwave Transmitter Module for RFoF

Typical S21 and S11 Bandwidth



Bias Setting Modes for LTA

Based on sophisticated phase measurement of this small dither signal, LTA-20 can provide four selectable operating modes: quadrature (Quad +), inverted quadrature (Quad -), minimum (Min), or maximum (Max) points.



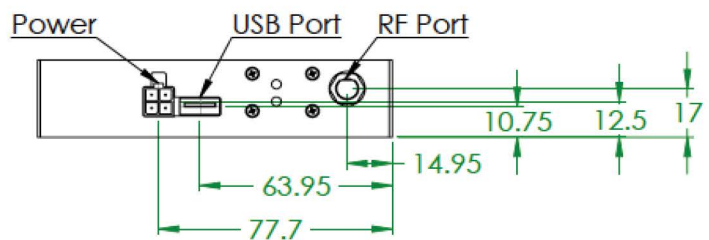
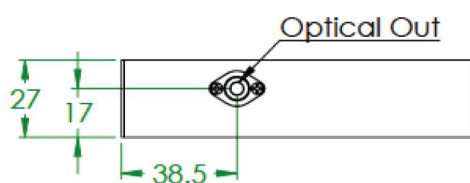
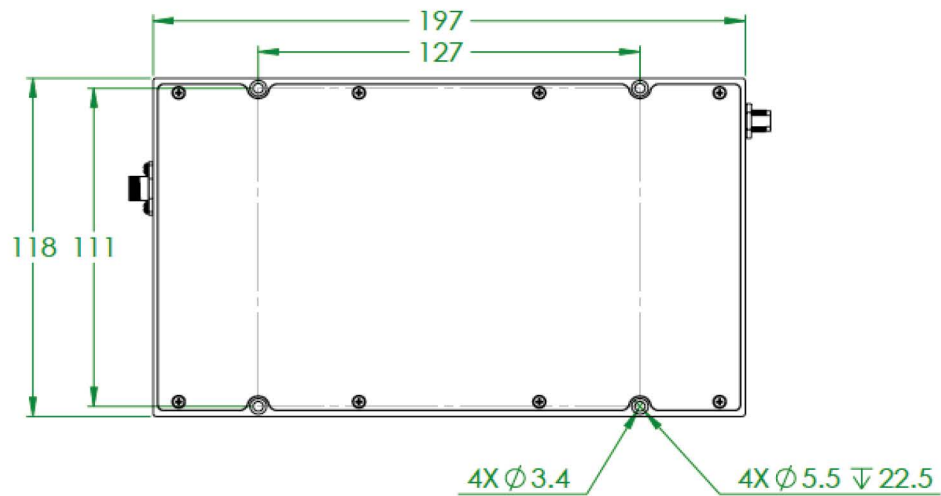
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Detailed Layout



No.	Feature
1	Optical Output Port
2	RF Input Port
3	LED Indicators
4	DC Connection Port
5	USB Control and Monitor Port

Mechanical Drawing



Unit: mm

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Precision Power Supply for LTA (optional)

Front



Back



General Specifications	
Parameters	Specifications
Input AC Voltage (VAC)	85-240
Input AC Current (A)	≤0.5
Input AC Frequency (HZ)	50-60
Transfer Efficiency	≤85%
DC Output Current (A)	4 A max.
DC Output Voltage (V)	±5 V
DC Voltage Ripple	≤2%
DC Connectors	Molex 4 Pin
Communication Connectors	DB-9 and USB 2.0
Dimensions (mm)	153x115x33

Typical S21 and S11 Bandwidth for LD Version

